

to manipulation by speculation. The cost of production, again, is diminished by successive inventions and improved mechanical and chemical processes, with a consequent influence upon demand and supply; variations in popular preferences, fashions, or sense of utility are in perpetual operation; and reduced prices in one article in the List (*e.g.* Wheat) may affect rye and other corn. Nor can corrections of the List be fully allowed for in respect of extraordinary and excessive fluctuations. Hence the total Index Number (whether associated with quantities in the calculations or not) does not afford a complete and accurate representation of the changes of values, as it is incompetent to compass all the vicissitudes attendant upon trade with the proportionate distribution of its materials, and fails to provide for the relative importance in consumption which those materials from time to time varyingly possess. The compilers of these useful and admirable Numbers must "trust," as one writer observed, that in a spacious range of commodities, inequalities and variations in one direction will balance those of the contrary character, and thus, in the aggregate survey, permit a reasonably illustrative history of prices to be exhibited. This notion is a popular form of the assumption which lies at the basis of the Theory of Errors—the assumption that errors (or divergencies from the truth) are equally likely to occur in excess and defect, so that the best medium is presented by the arithmetic mean of the discordant measures. A comfortable—and in most instances a necessary—doctrine in the face of difficulties, but one whose acceptance in any particular investigation must be preceded by as exhaustive an analysis as possible with a view to determining the probability of its validity. Index Numbers, notwithstanding all these sources of imperfection and incongruity, are valuable and compact modes of scrutinising with ease, rapidity, and sufficient exactitude the successive and related features of an extremely complicated problem. To Professor Jevons, it should be mentioned, is

attributable the merit of introducing this mode of comparative estimate.

The student should study, in connection with prices, the variations in the value of gold as a standard of measurement. Gold is simply a commodity like corn and iron, liable to